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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/694,597	10/27/2003	Osamu Sekiguchi	27391/US589	3511

4743 7590 03/23/2007  
MARSHALL, GERSTEIN & BORUN LLP  
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CHICAGO, IL 60606

EXAMINER
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LEADER, WILLIAM T

ART UNIT	PAPER NUMBER
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1742

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/23/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

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**Office Action Summary**

Application No.

10/694,597

Applicant(s)

SEKIGUCHI ET AL.

Examiner

William T. Leader

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 26 December 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

1. Receipt of the papers filed on December 26, 2007, is acknowledged. Claims 1-7 are pending.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

### *Claim Rejections - 35 USC § 103*

3. Claims 1 and 3-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over either Mooij et al (5,861,091) or Japanese patent publication 52-7828 in view of Bard et al (*Electrochemical Methods*), Cook (4,517,064) and Brodsky et al (6,190,530), and further in view of the admitted prior art for the reasons given in the previous office action and in view of the following comments.
4. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mooij et al (5,861,091) or Japanese patent publication 52-7828 in view of Bard et al (*Electrochemical Methods*), Cook (4,517,064) and Brodsky et al (6,190,530), and further in view of the admitted prior art as applied to claims 1 and 3-7 above, and further in view of Holland (1,511,967) for the reasons given in the previous office action and in view of the following comments.

***Response to Arguments***

5. Applicant's arguments have been fully considered but they are not persuasive. At page 3 of the Remarks, applicant states that the claims require friction contact between the grains or chips of the zinc dissolution metal and between the grains or chips of the zinc source in order to maintain an activated state of the surface of both, and points out that the grains or chips are shaken, vibrated or rotated thereby providing frictional engagement. As indicated in the previous office action, Cook teaches that vibrating the anode substantially eliminates polarization voltage and thus provides an electrolytic cell of lower operating voltage (column 2, lines 37-41). Brodsky et al teaches that a vibrating mechanism improves plating efficiency by providing a more uniform container loading or packing (column 5, lines 16-18). The movement of the anodes of Cook and Brodsky et al are the same movement (vibration) applied to the anode by applicant. Vibration of the anode made up of pieces of metal scrip in Mooij et al as taught by Cook and Brodsky et al would have been expected to result in frictional engagement in the same manner as the vibration recited by applicant. Applicant has provided no rationale as to why the claimed vibration causes mutual friction while that suggested by the references does not.

6. The declaration under 37 CFR 1.132 filed on December 26, 2006, has been carefully considered but is deemed to be insufficient to overcome the rejections of record. Both the declaration and applicant's Remarks refer to the examples and comparative examples described in the specification. Paragraph 3 of the declaration states that the examples are remarkably superior to the comparative examples. At page 4 of the Remarks, applicant states that from the tables, it is apparent that the efficiency of the examples is unexpectedly superior to the

comparative examples. It is noted that the table appearing on page 4 of the Remarks includes a column "% increase w/o friction". However, table 1 in the specification provides data for "barrel rotation", not friction. It is also noted that at the bottom of page 4 of the Remarks, applicant appears to conclude that shaking, vibrating or rotating have the same effect with respect to providing frictional engagement. To the extent that shaking, vibration or rotation of the type suggested by the prior art and also utilized by applicant produced friction between pieces of anode material, the examiner accepts that the data presented in the specification as "barrel rotation" may be characterized as relating to friction as presented in the table at page 4 of the Remarks.

7. Cook and Brodsky et al both disclose advantages of vibrating the anode. It is the examiner's position that applicant has discovered another advantage of vibration. As explained in MPEP 2145 II, prima facie obviousness is not rebutted by merely recognizing additional advantages or latent properties present in the prior art. "The fact that appellant has recognized another advantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious." *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985). Moreover, the results shown by applicant are not seen as being unexpected. Example 7 of Mooij et al relates to the influence of a mechanical treatment of the second metal. It was found that scratching of a steel surface had a strong effect on the hydrogen evolution reaction. Mooij et al state that the effect probably results from an increased activity of the surface. This appears to be the same result observed by applicant, since the frictional engagement discussed by applicant is a form of mechanical

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treatment. At page 4 of the Remarks, applicant states that "the frictional engagement of the metal grains or chips, whether by shaking, vibrating or rotating, have the same effect of activating the surface of the metals."

8. The declaration additionally includes figures 1 and 2 illustrating apparatus used by applicant to carry out the method of the invention. This apparatus appears to be essentially the same as that shown in Japanese patent publication 61-227199. An abstract of this document was cited by applicant in the Information disclosure Statement filed on June 1, 2004. A complete copy of this reference with an English abstract by Derwent is being made of record. The abstract states that the plating metal is dissolved in the presence of another metal and that the supply of plating metal is effected using a barrel type metal dissolving apparatus which consists of a liquid tank containing the plating bath and a rotatable barrel containing metal particles. The apparatus is shown in figure 2 of '199. It appears that the motion produced by the barrel of the '199 publication would be the same as that of the barrel illustrated in figures 1 and 2 of applicant's declaration, and that the degree of friction produced would also be the same.

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period


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will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William T. Leader whose telephone number is 571-272-1245. The examiner can normally be reached on Mondays-Thursdays and alternate Fridays, 7:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King, can be reached on 571-272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
William Leader  
March 15, 2007

  
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